

NAVAL AIR STATION D. C.

TABLE 3.—Mean free-air temperatures, humidities, and vapor pressures, and resultant winds (m. p. s.) during December, 1925, at Washington, D. C.

Altitude m. s. l. (meters)	Naval Air Station, D. C. (7 meters)			Weather Bureau (34 meters)	
	Temperature	Relative humidity	Vapor pressure	Wind	
				Direction	Velocity
	° C.	Per cent	mb.		m. p. s.
Surface.....	0.5	70	4.54	N. 58° W.	2.8
250.....	0.5	67	4.37	N. 60° W.	6.0
500.....	-0.8	68	4.00	N. 60° W.	9.2
750.....	-2.2	68	3.61	N. 59° W.	12.5
1,000.....	-2.8	68	3.13	N. 77° W.	12.6
1,250.....	-3.5	63	2.88		
1,500.....	-4.1	65	2.78	N. 61° W.	15.1
2,000.....	-5.1	68	2.50	N. 59° W.	18.0
2,500.....	-6.7	66	2.09	N. 89° W.	18.2
3,000.....	-8.9	65	1.58	N. 71° W.	19.0

THE WEATHER ELEMENTS

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PRESSURE AND WINDS

While the weather of the month was mainly devoid of spectacular features, nevertheless, important variations from the normal atmospheric circulation greatly influenced the temperature and precipitation conditions.

First in importance was the persistence of an anticyclone of more than average proportions over the Plateau region during the first half, maintained apparently without reinforcement from more northern areas, and devoid largely of the tendency to induce low temperatures usually associated with areas of high pressure.

The fact that temperatures over that region were materially above normal was probably largely due to the absence of any considerable snow cover, a condition which would prevent excessive night radiation from causing subnormal temperatures.

As is usually the case when high barometric pressure prevails over the Plateau and Pacific Coast States, storms moving toward that region from the North Pacific were forced inland over British Columbia or southern Alaska and entered the United States mainly to eastward of the Rocky Mountains. As a result, little snow or rain occurred in California and adjacent areas. East of the Rocky Mountains cyclones were inclined to move eastward along the northern border, particularly during the first half. However, the most important precipitation of the month occurred in connection with storms having their origin in the South or Southwest.

The severe tropical storm moving northward along the Atlantic coast at the first of the month gave heavy rains over the area, and a storm central in Kansas on the morning of the 3d moved eastward to the Mississippi Valley and thence northward to the Great Lakes during the following 48 hours, giving widespread moderate precipitation in the central valleys and most eastern districts. About the middle of the month some heavy rains occurred in the lower Mississippi Valley and Gulf States and again near the end of the second decade there was widespread precipitation over central and eastern districts, though the falls were mainly light except in portions of the East Gulf States. Otherwise there was little important cyclonic activity except along the northern border, but here the storms afforded rather light precipitation, as is frequently the case.

The first important anticyclone of the month, moving into the United States from the Canadian northwest, appeared on the morning of the 21st in the upper Missouri Valley and moved rapidly southward over the Great Plains to Texas and thence eastward over the Gulf States to the Florida Peninsula, giving some of the lowest temperatures of the month in the Southern States. On Christmas day the first indication of the most widespread and important anticyclone and cold wave of the month was noted in the far Canadian northwest, and by the following morning it had entered the United States, carrying the line of zero temperature into central Iowa. During the following 24 hours it developed marked intensity, the barometer rising above 31 inches in portions of the upper Missouri Valley, and the line of zero temperature reached as far south as central Missouri and southern Kentucky. During the following 24 hours the cold advanced into the West Gulf States with freezing temperatures in extreme southern Texas, to the coast line of the Gulf States, and into central Florida. In portions of the Middle Gulf States, temperatures during this period were the lowest ever recorded so early in the winter and much damage resulted to truck and tender vegetables, not only there but in southern Texas and other portions of the Gulf and South Atlantic States. This anticyclone gradually overspread the eastern districts and the coldest weather of the month was registered over the greater part of country during its passage southward and eastward.

The average pressures were distinctly high over the Northwest and correspondingly low over New England and the Canadian Maritime Provinces, the monthly sea-level means ranging from 30.32 inches at Boise, Idaho, to 29.71 at Father Point, Quebec.

From the Great Plains westward to the Pacific, except over portions of central and southern California, the average pressures were above normal and they were likewise above over the adjacent Canadian Provinces. Over the eastern half of the United States, and of Canada as well, the pressure averages were everywhere less than normal and decidedly so in the more eastern districts.

The wind circulation responded to the pressure distribution and was mainly from westerly points over the eastern third of the country, due to the marked depression of the barometer to the eastward. In the west they were controlled mainly by the high pressure over the northern Plateau, blowing from the northwest over the Missouri Valley and Great Plains, and largely from southerly points over the Pacific Coast States, except in portions of California where they were frequently from the northwest. Some high winds prevailed over the Atlantic coast districts during the passage northward of the tropical storm early in the month and again on the 23d, and some high winds occurred in the Lake region on the 5th and 6th. Otherwise high winds were infrequent and notably so on the Pacific coast where December is usually a windy month. At a few points along the north Atlantic coast and over the eastern end of Lake Erie the monthly wind movement was the highest of record for December, due not to excessive high winds on particular dates but to steady blows for long periods.

A list of the more important storms of the month appears at the end of this section.

TEMPERATURE

During the greater part of the month temperature changes were mainly unimportant except in a few local areas, but it was distinctly cold over the southern por-

tions during the latter half, and over all districts from the Rocky Mountains eastward during the last week. West of the Rocky Mountains the weather was moderately warm throughout the month, in fact portions of the far Northwest had the highest averages ever known in December and at local points in eastern Washington and western Montana the temperature was above normal every day in the month. Similar warmth appears to have existed in western Canada, where the monthly averages were far above normal, and reports from Alaska indicate the temperatures were frequently unseasonably high over much of that Territory, and later reports indicate that this condition has continued into the New Year. From the Great Plains eastward, and generally over the Southern States, the temperature averages were below normal save in portions of the North Atlantic States, the maritime portions of Canada, and extreme southern Florida, where the month averaged slightly warmer than normal. The mildest period of the month was mainly during the first week from the Mississippi Valley eastward, except in the Gulf States where the 13th and 14th were the warmest days, and about this time it was warm in the Southwest and portions of the far Northwest.

The lowest temperatures from the Rocky Mountains eastward were associated with the severe cold wave about the 26th to 28th, though at a few points in the lower Mississippi Valley the 23d was the coldest day. West of the Rocky Mountains the last two or three days were the coldest, though locally in New Mexico the 4th was the coldest day, and in California and Arizona the 20th and 21st were coldest.

PRECIPITATION

Considering the country as a whole, precipitation was deficient in nearly all the States, and even where in excess the margins above normal were small save in Florida and locally along the south Atlantic coast, where the excesses were mainly due to the heavy rains attending the tropical storm of the 1st and 2d. Over the middle and West Gulf States and thence northeast to the Ohio Valley the deficiency ranged from 1 to 3 inches and locally in this

area the monthly amounts were the least of record for December. In the far West precipitation was everywhere less than usually falls in December, save along the immediate coast districts of Washington and in one or two other small areas where the monthly falls were equal to or slightly more than normal. Over most of California and parts of Oregon and other near-by States the deficiencies were large.

SNOWFALL

Generally there was less snowfall than usually occurs in the first winter month, though in a few localities the amounts were comparatively large, notably in southeastern Wyoming and thence eastward over Nebraska to Iowa. High winds attending or following the snowfall in this area caused much drifting and interference with traffic, some roads being closed until the end of the month.

Although snowfall was mainly light it had a wide distribution, measurable amounts occurring in extreme southern Texas, where locally it was associated with sleet or ice storms, which caused considerable damage to overhead wires, trees, and shrubbery.

In the western mountain areas the snowfall was nearly everywhere light, particularly in the areas where much dependence is placed upon the early storage of snow for a supply of water during the coming summer. In California and nearby districts the snow was remarkably light and the depths on ground in the mountains were far less than usual at the end of December. In fact, many sections of the high Sierra, usually deeply covered, were entirely bare at the end of the month.

Due to continued moderate warmth, ice did not form of sufficient thickness for harvest in the large commercial districts until after the severe cold near the end of the month.

RELATIVE HUMIDITY

The relative amount of atmospheric moisture was largely deficient over practically all southern districts and generally over the Atlantic Coast States. From the Great Lakes and Ohio Valley westward to the Pacific there was mainly a slight excess.

SEVERE LOCAL HAIL AND WIND STORMS, DECEMBER, 1925

[This table contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Florida.....	1						Recorded in November REVIEW as of Nov. 30-Dec. 1.	
Marshall, Ark. (near).....	3	11 p. m.	50		\$3,500	Tornado.....	Storm moved from southwest to northeast over path 5 miles long; dwellings and barns damaged.	Official, U. S. Weather Bureau.
New Jersey coast.....	3			2		Continuation of tropical disturbance noted Nov. 30 over Florida.	Bulkheads, boardwalks, and other structures washed out or otherwise damaged by wind and waves; considerable loss and delay to navigation.	Official, U. S. Weather Bureau; the Evening World (New York, N. Y.).
Yazoo City, Miss.....	4	5:10 a. m.		2	500,000	Violent wind, probably tornado.	About 100 houses destroyed and 25 persons injured.	Official, U. S. Weather Bureau.
Calloway, Marshall, Livingston, Lyon, and Caldwell Counties, Ky.	4	A. m.	50-1,320	2	75,000	Series of storms of tornadic character.	Many houses unroofed; several wrecked; extensive property damage at Murray, Kuttawa, and Princeton; considerable loss to telephone and telegraph companies.	Do.
Posey and Gibson Counties, Ind.	4	A. m.				High wind.....	A few buildings unroofed; some crop damage; several persons injured by flying glass.	Do.
Cairo, Ill.....	4					Wind and electrical.	Minor damage reported.	Do.
North-central counties, Mo..	4					High wind and snow.	Railway trains much behind schedule; public highways made impassable by drifted snow.	Do.
St. Paul, Minn., and vicinity.	4					High winds.....	Two miles of wires blown down; trains delayed.	Pioneer Press (St. Paul, Minn.).
Kansas City, Mo.....	13-14				7,800	Glaze.....	Much damage to wires, trees, shrubbery, and other exposed objects; 350 breaks in telephone wires; some delay to traffic.	Official, U. S. Weather Bureau.
Northern Iowa.....	24					Strong wind and snow.	Many highways temporarily blocked, resulting in some delay to traffic.	Do.
Western Lower Michigan and sections of Upper Michigan.	25-27					High winds and snow.	Snow drifted by winds caused blockade of roads; no damage reported.	Do.